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**FACTORS AFFECTING DECISIONS FOR INVESTMENT IN THE DEVELOPING WORLD --
THE VIEW FROM NESTLE**

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Summary

When deciding when and where to invest we always look first at the present size and future potential of the market, and we carefully evaluate the conditions for investment in a country. We want each project to be viable in the long term. Regional integration of national economies opens up further opportunities concerning the relevant market size, and it gives access to economies of scale. Provided the regional integration in question shows sufficient long-term stability, we will more and more also take into account this regional dimension when investing.

Globalization of the world markets is a relatively new challenge, adding one further strategic consideration to investment decisions. The developing countries and newly industrializing economies (NIEs) are more and more integrating into the global markets; the former niche approach no longer applies. This new trend induces more and more international firms to establish presence with all or part of their product -- and brand -- portfolio in all important markets of the industrialized and developing world, and in particular in the most dynamic markets. Both regional integration and globalization reduce market fragmentation.

*) H. Maucher is also Chairman of the Working Group North-South of the European Round Table of Industrialists. This group -- which is composed of representatives from more than 20 European companies of different industrial sectors -- has prepared two reports on the issues of this paper: "Survey on Improvements in Conditions for Investment in the Developing World", May 1993, and "European Industry -- A Partner of the Developing World", August 1993. Both reports are available free of charge from the ERT Secretariat; Rue Guimard 15; B-1040 Brussels; Belgium; tel. +32-2-511 58 00.

For Nestlé, the globalization of markets means thinking even more long-term, also concerning the risks we assume in a specific market. On the other hand, it allows us to go even further in the risk sharing by not putting all eggs in one basket. Globalization has brought an intensified co-operation between countries, and international organizations (IMF, etc.) which assume global responsibility. International rules which support liberalization are being developed and, more and more, also applied.

The new trends may also give room for more cross-border industrial organization. Our ASEAN venture is an example for this new type of organization. But even an internationally oriented production needs its roots somewhere, and it will be once again the local conditions for investment that strongly influence the allocation of business activities.

Investing in the emerging markets of the developing world

In 1993, more than 4.3 billion people, i.e., almost four fifth of the world population, lived in the developing world. This corresponds to an enormous potential of non-saturated markets of production and creativity. In most of these countries the economic situation is extremely difficult. But entrepreneurial energy that is less restricted, will open up new potentials for the growth and development of these economies, and, ultimately, for investment and sales by international companies as well.

Since the late 1980s, we are witnessing a self-feeding process of higher and qualitatively improved growth: Liberalized conditions for investment bring about a higher quality in investment, i.e., a higher investment efficiency and, ultimately, higher sustainable growth rates. An increased return on investment -- on macro economic level and for companies -- then stimulates the mobilization of additional local private resources and attracts more foreign investment. This process can be observed in Asia, the area leading in growth in past decades. There, growth is expected to continue at a multiple of Europe's growth rates. As a result, two thirds of any increase in the world demand for cars, for example, may be coming from Asia in the next few years. This trend can be shown for other products with similarly high potential economies of scale as well.

Latin America and certain African countries will in the coming years quite probably also show a growth significantly higher than in Europe. On those two Continents, more than anywhere, one should not only consider averages; each country should be viewed in its own right.

Nestlé and many other companies participating in this UNCTAD survey have already been active in many countries around the world at the time when expressions such as 'globalization' or 'multinational investment' had not been coined yet. Today Nestlé runs 482 factories in 63 countries, with a total turnover of US\$ 38.4 billion. 137 of the production facilities are located in 44 developing countries and newly industrializing economies. We usually produce locally for one market or the region, the first level of the quality control is also taking place locally, we have our marketing organization rooted locally, and we do our research and development in twelve different countries, of which four are situated in the developing world (Ivory Coast, Ecuador, Malaysia and Singapore).

Among product groups typical for the production and the sale of Nestlé in the developing world, are condensed milk, milk powder, infant formulae and cereals, coffee extracts, drinks, chocolate, soups and sauces (see also the enclosed chart). Our product portfolio is based on a double strategy - we sell traditional products of the Nestlé Group -- we introduce those products and create the necessary infrastructure, i.e. agent, distribution network, production, and so on --, we sell product related to internationally used concepts, but adopted to local taste and to local raw materials (e.g., Milo in Nigeria on Sorghum basis); and we develop new products with local roots, such as the popularly positioned products, i.e., good value for money, using local raw materials, often building on local habits and traditions. Locally developed products may often also have a global market potential.

Our overall aim is to serve well as many customers as possible and to offer products adopted to the consumers' taste: This taste differs from country to country, and between segments, and it is constantly changing. Nestlé products are, therefore, highly appreciated all over the world.

While the Nestlé involvement in the developing world has been strong for more than seventy years, an accelerated widening and deepening of our businesses

there has started in the mid-1980s: New factories are being constructed and additional products introduced in markets where Nestlé had a business before, new products are being developed and production facilities built in countries where Nestlé had not yet been in business. We have clearly moved in ahead of the general liberalization in conditions for investment in the developing world.

Since 1990, as a result of the general market opening in numerous developing countries and NIEs, we observe a rapid increase of foreign direct and portfolio investment in the developing world in general. The amounts of flows in the two categories have more than tripled compared to the averages in the early eighties. Some countries falling behind in speed and scope of market opening may have seen their FDI inflows being reduced; the reasons for that is efficiency considerations for the allocation of resources and the outlook for competitiveness and not 'bad will' of investors. For Nestlé, the policy and investment behaviour is different: from our cash flow and through the access to financial markets we have enough resources available to invest wherever and whenever a good opportunity arises.

The liberalizations prove also highly supportive to globalization; but the integration of developing countries and NIEs in the world economy is basically market-led. New openings to private businesses in the developing world offer opportunities for foreign investors, but also bring in new competitors. We cannot keep them away from our markets (not in Europe and even less so in third countries), so we have to learn to compete on their own home turf.

Globalization and partly the fear of renewed protectionism seem to be behind the recent rapid growth of FDI flows between Europe, U.S. and Japan.) In 1980, the FDI stock with home and host in the triad accounted for 30% of the world-wide stock of inward investment; by 1988, intra-triad stock had increased to an estimated 39% of world-wide inward stock. (UNCTC, World Investment Report 1991; New York 1991; p.36) Since then, we have seen the pendulum swing back to an increase in the share of FDI flowing to the developing world. The international competition on rules has become a key feature of the trends in conditions for investment (and the major driving force of liberalization): With improved conditions, more and more countries of the developing world are interesting and accessible for investors.

Traditional factors relevant for investment decisions: market size and local conditions for investment

Whenever investing, we have to consider the interests of both company and host country: Nestlé's commitment to the Third World requires that we be very sure that actions we take in a developing country are beneficial to that country. Only those actions which are beneficial will be sustainable and profitable for us in the long term. As we look at the societal aspect of a new project, we must consider whether the 'down sides' outweigh the benefits. If they do, then we should not move forward. We work in each country with adjusted production methods with often a lower degree of mechanization than in industrialized countries, but always with the same basic quality standards for our products.

Local subsidiaries are established step by step. We usually start with a trading company or an agency, we then import semifinished products for final transformation in the country and, finally, move over to full scale production of an increasing number of products.

Nestlé invests when a market (i.e., a country or important consumer segments in a country) is up to a certain level of economic development, i.e. size and quality aspects of local demand allows to establish a viable business; and provided the long-term outlook is good. That means that we also invest to serve a market that, in the beginning, is still quite small but has the potential to grow. We measure the volume of a market in a country and, wherever this is possible, in a region.

The investment decision also very much depends on host country policies and the overall conditions for investment: infrastructure, retail distribution; ownership rights. Three things come for us in first place: We need a financial compensation for the technology and transfer we continuously transfer from the fund of knowledge in the Nestlé Group to each subsidiary. Second, we need enough flexibility to transfer staff from one country to another, for training and as an efficient means of technology transfer in general. Third, we need a maximum of freedom for our transfers in foreign currency.

Low labour cost play also a role, but this is never the only factor for investment; in other words: we are not looking for cheap labour, since this also means too low consumption, and often the very large wage-per-production

unit differentials compared to alternative locations for investment are only temporary. Often well-trained labour is more important than cheap labour, due to increasing quality levels and quality guarantee requirements.

Raw materials are important when allocating investment: We rely on a sufficient supply of fresh milk and other raw materials to run our business. Sufficient means both, volume and good quality. Where those raw materials and equipment are lacking, we need the possibility to import.

We take account of risks: A certain instability may result from the often difficult situation of these countries (socially, economically). As long as there is no systematical destabilization of the institutions we are able to assume those risks. Our relatively large number of investments in different places of the world allows us to share risks.

Regional economic integration agreements as one of the new factors

Regional trade and economic co-operation agreements are able to create a larger 'home market' -- this may allow an acceleration in the sequence of investment, i.e., to start earlier with the local production for the whole region than it would be possible for each single member country. And there are efficiency gains due to economies of scale: Contrary to what is often said, the new regional integration agreements have not led to a fragmentation of the world economy as a whole, through the creation of trade blocs, nor is such a development likely.

The number and variety of organizations formed for regional integration is soaring: ASEAN, Mercosur, Andean, CACM, African regions. Investment becomes only interesting if regional market opening has good chances to last. (Some companies made some negative experiences in Eastern Africa in the 1960s/1970s.) Not all of the new or re-enforced regional economic agreements will succeed, but all efforts are taken into account as a potential opportunity when discussing investment budgets and strategies.

One interesting new development in regional agreements is the creation of a special regulatory framework for region-wide investment. The ASEAN Industrial

Joint Venture (AIJV) scheme foresees that non-ASEAN entrepreneurs could take up to 60% of equity in an AIJV. Local majority financing rules on certain products in some member states are not applied, and a minimum margin of preference of 90% on existing tariff rates is granted to AIJV products. Nestlé, after bilateral negotiation with all the countries participating, has formed such an industrial joint venture. Five new factories in five different countries, each one specialized in one product group, were planned. Three of them have already started production, the other two will start before the end of this year.

With or without regional economic agreements, there are regional spheres of influence -- you have to be well established in the leading country of a region; this facilitates market penetration in the whole area. Countries such as Egypt or India have an eminent strategic position between continents and cultures; in some businesses we see today the position taking around the southern republics of former USSR (Turkey, Iran?) to build a base for future market penetration.

Globalization -- a further factor

In the 1990s industries and markets are moving toward more globalization. We see a multifaceted dynamic process unfold, not a new state of the world economy. The process of globalization is still far from having reached its end, it will continue further. By many measures, the world economy today is less integrated than it was in 1914. World War I and its aftermath -- i.e., the Russian Revolution and especially the years of the Great Depression -- were in fact witness to what might be termed a deglobalization of business. (Bergsten/Graham; p. 20) The historical experience shows that there is no guarantee that a process such as globalization is irreversible, but the probability of a turnaround back to isolated markets has become quite low. There is reason to believe that international trade and investment will continue to expand, and we expect it to become as pervasive and spectacular as in the second half of the 19th century, but on a non-colonial, i.e., more sustainable base.

The globalization of the 1990s is touching and often revolutionizing the following areas of importance to business:

- Communication systems, 'cultural' exchange and information flows. (It has for example been estimated that international business calls outnumber the private cross-border calls by three to one.)
- Production and basic production technology. But globalization of companies does not mean to run operations on one single standard all over the world.
- Lifestyles of the consumers and consumption patterns: Coca Cola and MacDonalds are only symbols of the globalization in food markets, they are not the whole reality: Globalization does not mean selling identical products and services everywhere. The degree of differentiation usually rather depends on the nature of the product than on the character of the company.

In the case of food products, there are more and more segments defined by the situation (work, distance between home and work, marital status) and interests, and much less by nationality. The consumption patterns of the people in one specific segment are similar across the world; but since the number of different segments in one market is increasing, the variety of products to satisfy demand in one country is increasing as well.

- Products, brands, product concepts (e.g., Nescafé, one single concept for quality and convenience in soluble coffee, but 190 different varieties sold worldwide, different according to local taste), solutions (e.g., the branded soya products, such as Twin, Ceresoy, Bonus, Maggi-Menumate, a response to the global inefficiency in protein production. The return to land in proteins from soya production is almost thirty times the yield from cattle farming. The solution to the problem is not simply to change the production, but to develop and market branded products based on soya in a global market perspective.)
- Competitors, competition (high profits in one region allow tougher competition in other areas)
- Sourcing in raw materials, investment goods, packaging, etc.
- Finance: funds can more easily be raised globally (and there is the possibility to add value in its own right by exploiting distortions in

financial markets, reducing taxes, and managing financial risk exposure), but: the firm must match its global competitors on these terms, and there is also the globalization of yardsticks for judging current and prospective operations.

- An increased macroeconomic interdependence, partly a result, partly a cause for globalization (e.g., exchange rates, trade); but trade relationships and income levels reveal strong regional patterns of development; we see regionally focused centres of growth (e.g., South-East Asia)
- Global political and economic co-ordination, increased coherence in the global legal system (e.g., liability of the manufacturer); structures, institutions, market order
- Social issues and problem awareness (environment, climate, health and nutrition)

One result of the trends shown above and a characteristic of globalization of markets is that more and more decisions in or for one country have an impact on the international market; and the base of reference for business action -- sourcing, financing, marketing, etc. -- is no longer a sum of country markets but segments across international borders (not in all cases including the whole world, but almost always several continents).

The globalization of companies is partly a reaction to more globalized markets. It does however not mean that these companies become footloose, that the state as an institution and service organization is in decline and that large companies gain an uncontrolled power. Any long-term minded manager of a large global enterprise knows that as a consequence of increased global interdependence he will have to assume a wider and not less responsibility within the company's social and economic environment.

Globalization is a constant challenge and even more an opportunity for Nestlé, with a direct or indirect impact on an increasing number of our decisions. It is not possible to show the full width of the impact. Here we limit ourselves to illustrate how globalization affects market penetration and investment

strategy; and further below you will find some remarks on the effects on Nestlé's industrial organization.

Today, to remain competitive we need the presence of our main product groups on all key markets for the necessary economies of scale in production and finance, and even more in research and development plus knowledge creation in general. Nestlé wants to serve also the relatively small, but global segments of lifestyle and demand even better. We also need this global presence to feel the new trends relevant for our business, both from developments in demand and competition.

Thanks to our global presence, we are able to increase the richness -- in quality as well as variety -- of our product portfolio marketed. The main elements of our offer are:

a) First we have the global products -- offered in similar form all over the world: KitKat; the breakfast cereals of CPW (the Nestlé-General Mills joint venture introduced in ASEAN markets even before all industrialized countries were covered); Milkmaid; infant formulae; etc. These global products will not replace the regionally differentiated products, which are also part of our product range. Also globally, we are not trying to 'grasp the consumer en masse', but to address target groups. And we have no intention to work with global marketing, i.e., marketing as an 'international average', since all business is local! (see section on industrial organization)

Second, we have the global concepts in regional differentiation: Nescafé has already been mentioned. Further, Nestlé products focusing on convenience, health, a specific situation of the consumer but each time adopted to local taste, could be listed here.

b) Brands: There is the Nestlé guarantee seal (the global dimension) plus a local telephone number of the Nestlé consumer information service; there is also the globally coherent brand positioning (but again not the total unification, as markets and languages differ). Finally, there is the brand as a guarantee for continuous product renovation.

c) The speed: The competitors are also moving, but we try to be at least one step ahead

Globalization has an impact on our industrial organization as well:

The organization of Nestlé has been one of a high level of operating independence (marketing, sourcing, production, personnel policies, etc.) and, at least partially, strategic freedom of subsidiaries. Few but strictly applied internal norms and values ensured, and still ensure, the coherence of the company.

The question of industrial organization in globalizing markets is clearly not one of centralization against decentralization. Over the last 20 years, the operating independence of the market head, i.e. the person responsible for running the subsidiaries of the Nestlé Group in a country (or region), has been further increased: We need the flexibility, the commitment and identification with the task of our people in the markets. Today, change has become even more rapid, this requires companies to be more nationally responsive. We want to serve our customers in all key markets with equal dedication, we have to be as close as possible to the ultimate customer. Globalization does not mean unification, all markets become more demanding concerning quality levels and width of choice, and it is necessary to have operational decisions near that customer to implement the strategies. We systematically avoid the risk of using improved communication facilities to interfere with operational management over long distances. (The U.S. invasion in Panama in 1989 is a case in point to illustrate why this must fail). As national treatment becomes more and more the rule, it is the local management which negotiates with governments, the main role left e.g. for the centralized legal departments may be in the start-up phase of a subsidiary. And, last but not least, the higher percentage of (qualified) local staff gives more autonomy to local units in one of the key matters of corporate development, i.e. personnel policy.

There is, however, an increased strategic importance of brands in the globalizing markets. We have, therefore, created the strategic business groups to coordinate strategy for products and brands in a long term perspective (but not heading for total global product unification). In the classically multinational branded packaged goods industries, companies are coordinating product development, marketing approaches, and overall competitive strategy across previously quite independent national organizations.

Globalization obviously also directly influences our investment decisions and

organizational structures in the developing world. For Nestlé, the fact that developing countries are becoming more and more a part of global markets means thinking even more long-term, also concerning the risks we assume in a specific market. It allows us to go even further in the risk-sharing by putting not all eggs in one basket.

As the chart shows, Nestlé is already well established in the developing world. In the coming years, new factories will be constructed, empty cases will more and more be filled and new countries will be added to the list of markets for our products. Over the last several years, we have been adjusting to the following changes:

- Consumption patterns, global segments and, as a consequence, the global products and product concepts (Coca Cola, KitKat, convenience, etc.) are spreading all over the developing world
- With the liberalization of the developing countries, the global brands can now fulfil an appropriate role, serving as a vehicle for information and as a quality guarantee for the consumers in the developing world.

The brand culture replacing the former generics view in the markets of the developing countries may help to improve competitiveness and wealth of the economy in general.

- Competition of the international firms: We have to take into account that other countries are building up strategic positions in developing countries as a part of global markets as well.
- Thinking global also means providing solutions in a global perspective which encompasses the developing countries: We have already described our soya project which may help to solve the global nutrition problem.
- Environmental matters as global issues: a 'Mrs. Environment' of the Nestlé group who reports directly to the Chairman, is also looking at our projects in the developing world

In other areas, already widely applied policies and approaches of the Nestlé Group were re-enforced, e.g. with respect to:

- sourcing (non-local raw materials, investment goods, etc) on global markets: no centralized approach, but guidance of specialists and wide exchange of information and experience within Nestlé
- information, exchange of information on marketing, production technology, organization, etc.; research and development (see the short description of our Reco system)

The experience of recent years shows that the approaches and the success of companies such as Nestlé are not only a result, but also a cause of the globalization of markets.

Conclusion

Globalization and successful regional integration will accelerate the investment sequence (from agency to establishing the full range of production facilities) of Nestlé in the developing world. Our production will gain in efficiency, and we will be able to offer in these markets a wider range of different products. We expect competition to increase, since companies which up to now concentrated on their home market (e.g. Europe) may now also consider to establish parts of their product range and production in the developing countries and NIEs.

With respect to its actual importance, a disproportionate space in this paper is devoted to globalization. This is partly in reply to the questions of UNCTAD, partly it is to evaluate the relatively new element more in depth. The final investment decision, however, will still mostly depend on the conditions for investment in a specific country.

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Foreign Investors' Motivations: the ENI approach

The ENI Group

ENI is a group of Companies operating mainly in the fields of energy (oil and gas) and chemicals. While the Holding Company is fully owned by the Italian Government, the Group operates worldwide, according to the logic of free market competition. This entrepreneurial approach was recently stressed by the change of the legal status of the Holding from Corporation to joint-stock Company. Major privatisation plans are under way.

The Group employs about 130.000 people; in 1992, it has produced 25,7 million tons of oil and 17,5 billion cu.m. of natural gas, marketed or used as petrochemical feedstock 55,8 million tons of refined products, and distributed 47,8 billion cu. m. of natural gas.

While Italy attracts the largest share of ENI's activities, about 36% of the proceeds are made abroad; and foreign direct investment accounts for a similar percentage of total investment. In 1991, ENI invested abroad 2820 trillion liras (well over 2 billion dollars), about 73% of which in oil and gas upstream, the balance being mainly refined product marketing, chemical plants and natural gas transportation facilities.

Motivations for FDI in ENI's main investment sectors

The reasons which lead a Company to invest abroad are widely different in different sectors. Hence, this paper discusses separately FDI's motivations in the four sectors which have absorbed the bulk of ENI's FDI:

- oil upstream;
- natural gas;
- oil downstream;
- chemicals.

For each sector, a brief description of its unique features will be given, and traditional and new factors affecting FDI will be discussed.

Oil upstream

Overview

Crude oil transport systems have attained an exceptional level of efficiency; hence, oil flows rather freely even to remote markets, and a small difference in the price of the barrel is sufficient to cover long haul shipping costs. Fundamentally, therefore, the market is global, and the same crude can be found in Europe, in the States and in Japan.

The consequence is that oil exploration and production (E. & P.) is a global business: not just the Major International Companies, but even many relatively small independents operate worldwide, ready to move and explore wherever the prospects are good. The total amount of oil reserves held by a Company is, in actual fact, far more important than their geographical location.

Traditionally, upstream and downstream operations were integrated: the same Companies produced, transported and refined crude oil, and sold the products. But, since the 1973 crisis, National Oil Companies have taken over, in full or in part, upstream activities in most oil exporting countries, and vertical integration has gone astray. The consequence has been the emergence of two groups, producers and consumers, with diverging interests, often opposed in a climate of harsh confrontation, which have led to the various oil shocks and countershocks.

The basic task of the oil upstream industry is to find and develop enough oil to maintain the supply/demand balance. The real main limiting factor is finance. Oil E. & P. is an investment-intensive business; and, as E. & P. moves to more difficult locations, the real cost of extracting the marginal barrel of oil increases. The upstream sector will therefore need very large investments: for the next decade, 170 billion constant dollars per year is a reasonable estimate. This is a tremendous amount of money to be raised, especially in the present environment of international finance.

Major Oil Companies could contribute to raising such funds, given adequate contractual conditions; but, as was said before, in several OPEC states the upstream activity is a monopoly of the National Oil Companies.

Investment motivations: the traditional factors

Upstream Companies have radically changed their investment policies and motivations in the last quarter of century.

When the oil business was still integrated, the basic policy of an oil company was to keep a reasonable balance between supply (its reserve base and production capacity) and demand - the volume of products it could sell on its downstream market.

After the first oil shock in 1973, and up to the early eighties, the main concern was safety of supply. A large majority of experts was convinced that the days of "cheap" oil were over, and that the price of the barrel would have continued to increase; demand was rigid, and the oil companies felt that they could always pass the burden of higher prices to the final consumers - provided they could have enough products to sell. With the expectation of higher and higher prices and continued shortage, costs were not much of a problem, and E. & P. investments soared.

After the oil countershock in the early eighties, when the oil price plunged to less than 10 dollars per barrel, the market settled to what presently looks to be a reasonable degree of stability. The general perception is that availability is no more of a problem: price is the only question. Companies, in making investment decisions, have come to rely almost exclusively on economics. Economics depend from the geological prospects (i.e. the likelihood to make a good find), and the contractual conditions (oil entitlements, taxes, duties, royalties). The best combination of these two elements is now the basic motivation for any upstream investment.

ENI was originally set up by the Italian Government with the basic aim to assure a safe and competitive supply of oil and gas to the Country, breaking what was at the time a monopoly of the Major Internationals. The "mission" to assure Italy's oil supply continued in the years of oil shortage. When the oil price collapsed and the supply became a question of price, this mission lost importance, and ENI's upstream activity became business oriented, with investment decisions made on the same ground as by all other international oil companies.

Investment motivations: new factors

Upstream investments are for the long term: lead times take years, and the investment repayment period is quite long. The economic viability of an oil field development will depend on the course of the oil price in this long period. But the oil price has proved to be highly variable, and long term forecasts unreliable; decisions are hence made on uncertain ground. This is a serious source of concern for a sector which must attract a terrific amount of money to preserve the supply/demand

balance. Given the present context, market forces, if left alone, will work in fits and starts: low prices will discourage exploration; production will languish, leading to shortages; the price of the barrel will rise, feeding more exploration, and finally restoring the balance. But lead times are so long, that in the meantime price instability can become rampant. So, whatever can be done to promote market stability and an orderly development of the price trend is of paramount importance; but the problem is not an easy one to tackle.

Another factor affecting the oil upstream environment is the present trend to deregulation and privatisation. In actual fact, in oil upstream such trend is still limited to the former centrally planned economies - in practice, to CSI and China - and still to a very limited extent. Quite a few western oil companies (including Agip S.p.A., ENI upstream arm) operate in China, while in CSI the situation is still unclear. Even in these cases, investment motivations are the ones discussed before, and there is no major change in the global framework; but a larger reliance on the free market could in the future play a major role in shaping a new and more stable context.

Trends and problems

A good share of the problems that the oil industry has to face comes from the disruption of vertical integration. Oil exporting countries have moved to regain control of their national resources, and in order to do so they set up national oil companies and in some cases gave them a monopoly on domestic oil E. & P.

But the national oil companies have now developed into solid, efficient organizations which don't need the protective umbrella of a monopolistic regime. They have embarked or are now considering a strategy of downstream integration into the markets of the oil importing countries. At the same time, it may be expected that the governments of the oil producing countries will come to realize the potential benefits of allowing a plurality of companies to operate in the domestic upstream, rather than relying only on a monopoly of the national oil company. Hence, it is reasonable to expect that in the coming years the oil companies that presently concentrate on downstream activities will get more of a chance to recreate their upstream integration and vertical balance.

The benefits of vertical integration - now with the full participation of the national oil companies - are potentially very important: better market management, end of the confrontation climate, technology transfer, and - most importantly - improved chances of raising the enormous financial resources needed to find and develop enough new oil.

Natural gas

Overview

Natural gas can be found with oil ("associated gas") or alone ("dry gas"). E. & P. is carried out by the same Companies which operate in the oil upstream sector; technology and investment motivations are quite similar. There is, however, one basic difference: long distance gas transport is terribly expensive, and the investments in transport infrastructure needed to take gas to a far away market largely overwhelm investments in the upstream phase.

Gas can be transported by pipeline, or it can be liquefied and shipped (at extremely low temperature) with purpose-made gas tankers. In both instances - especially in the second one - the investments required are enormous. Therefore, the wellhead value of natural gas is completely dependent on the location of the gas field: if the gas fields are remote, gas can even be completely worthless, as the price of transport would exceed its value on the final market. In the old times, this was the rule: gas in developing countries was just a by-product of oil E. & P., and oil companies did not attach any value to it. At present, of course, the situation has changed: there is a strong demand for natural gas in the world, and transport systems have remarkably improved. There are, however, huge quantities

of gas which are left in the ground, as it is impossible to transport the product to the consuming markets at competitive prices.

This state of affair has many consequences:

- natural gas is far more "radicated" than oil in its geographic location. The value of "remote" gas being minimal, the best solution is to use it in place, setting up distribution networks in the neighbouring cities, using it for electricity generation, for energy-intensive industries, or as feedstock for petrochemical plants. Therefore, gas is less likely to be a hard-currency source for the producing country, but more likely to be a basis for industrial development;
- while no effort is spared in drilling for gas in industrialized (or industrializing) countries, there is obviously some restraint in searching for gas where a local market does not exist. If transport facilities must be created from scratch, only very large gas fields (which can feed a gas liquefaction plant) constitute a viable target;
- transport by pipeline is economically feasible only for relatively short distances, favoring the creation of regional networks; LNG (liquefied natural gas) can be shipped to greater distances, but the feasibility is always dependent from the distance, the process is very expensive, and needs a huge reserve base to assure the feedstock for all the life span of the plant;
- transport infrastructure are always "dedicated": they are made to supply a given customer for all their life. This link is absolute for pipelines, somewhat less for LNG; but the linkage is always strong. Hence, political stability and a reputation for contractual correctness are far more important than in the case of oil.

Investment motivations

Associated gas is a by-product of oil E. & P., although a far more appreciated by-product than it used to be. Drilling for dry gas entails an evaluation of economic producibility: whether gas can be used domestically, or if and how it can be transported to the markets.

Investment in transport infrastructure is determined by the need to service a growing demand. Italy's natural gas consumption is rising rapidly, with an average annual growth rate in the range of 5-6%; domestic production is static; a continuous increase in imports is therefore mandatory.

This situation is common to all Western Europe: taken as a whole, the region has a strong (over 200 billion cu. m.) but static and insufficient natural gas production, and its imports from the rest of the world are soaring: from 23 billions cu. m. in 1980 to 90 billion cu. m. in 1990, to over 100 billion cu. m. in 1992. Therefore, Italy can not count on its European neighbours for additional supplies.

Natural gas being a regional business, possible supply sources are limited. Each additional source entails very large unitary investments, and a long-term linkage for huge gas volumes: each is a case by itself, which must be studied taking into consideration all long-term implications. The basic aim, obviously, is to make adequate volumes of natural gas available at the best economic conditions; but investments of this size are too complex and have too many implications to lay down simple guidelines.

Oil downstream and chemicals: some common features

Enichem, ENI's chemical arm, operates mainly in the field of base chemicals. Products are commodities, not specialties; the market makes the price; competition is on efficiency, on having the lowest production costs.

Oil downstream offers similar characteristics. There is no remarkable difference between the products sold by the various competitors; the fundamental question is efficiency and cost shaving.

In oil upstream and in natural gas, we have seen that, although economics are always a prime factor, strategic considerations on safety of supply and supply/demand balance can have a strong weight in

making investment decisions. In oil downstream and in chemicals, instead, investment motivation are more straightforward and economically-minded: in a word, business.

These are the traditional motivations. As far as new factors are concerned, the main one - at least for ENI - is the development of the European Common Market. The Common Market affects the two sectors considered in different ways, but one point is common to both: the importance of logistic in setting up a cost-efficient structure. Both oil downstream and base chemicals handle huge volumes of products; therefore transport costs (of feedstock and of final products) are a significant component of the cost structure. The optimization of logistic in the new, larger market poses new problems, offers opportunities, and requires new investment.

Another new factor is the opening up of the East European markets.

The world is changing at a fast pace. We have concentrated on Europe here, but the change is brisk everywhere. Change may entail new investment opportunities: this will be the case if governments will put in place a stable framework for investment, and will move to minimize political risk through the adoption of appropriate legislation and regulations. It is important to create a new wave of investment, so that each Company will feel that it *must* invest internationally in order to adapt to the new conditions and remain competitive.

Oil downstream: particular features

Oil downstream includes refining and marketing. In refining, there are at least two "new factors" worth noting.

The first is that oil substitution policies have led to lower consumption of industrial fuel oil (the so called "heavy end of the barrel"), which has been to a good extent substituted for by natural gas, nuclear power or other energy sources. On the other hand substitution is possible (at least for the time being) for the light automotive fuels - gasoline and gasoil. As a consequence, the "consumption barrel" (the product mix requested by the market) has become lighter and lighter. To lighten the barrel, refiners must rely on "conversion plants", like hydrocrackers. Therefore, refineries must be continually upgraded; and investments in conversion capacity are very large.

Second factor is increased environmental sensitivity, which demands cleaner refined products. There are no technical problems in getting cleaner products, but they obviously demand improvements in the processing plants; and such improvements are usually quite expensive.

Conclusion: just to keep the refining system updated and competitive, an oil company has to engage almost continuously in huge projects, which pose some financing problems in the present situation.

Base chemicals: particular features

The most important item in base chemicals cost structure is the feedstock; a production plant which can get feedstock at low cost has a strong competitive advantage.

Natural gas is an excellent feedstock for many petrochemical products; and, as was noted before, gas found in remote locations has little value, and can be made available to chemical plants at very low price. Gas in Middle East, in the CIS and in many other countries, can be used as a chemical feedstock.

Many technical and political reasons hampered for a long time the development of gas-based petrochemical plants; but the process is now in full swing, and may pose difficult restructuring problems to the entire European petrochemical industry, which is traditionally based on virgin naphta (a refinery product), and does not have cheap gas available. ENI has been particularly involved in developing gas-based production of oxygenated octane-boosters - MTBE and methanol - setting up world-scale plants in South America and in Middle East.

Another factor affecting the European base chemical industry is, as was said before, the progress of the single market, which leads to increased competition and new alliances, in order to reduce transport costs, share technologies and reach a position of preminence in the market.

To conclude, it's clear that in this sector things are changing at a fast pace, and Companies must commit huge technical and financial resource and continuously update their strategies in order to remain competitive.

Conclusions

ENI's main operating sectors are investment intensive; oil upstream and gas transport systems in particular require huge investments, whose financing poses difficult problems even at world scale. But in less demanding sectors as well, the brisk pace at which the business environment is changing requires major financial commitments. ENI is a strong investor, being used to devoting to capital expenses a higher-than-usual share of its proceeds; but the situation is quite demanding, and even in ENI the weight of the financial constraint is felt more than in the past.

The quick pace at which the business environment is changing, coupled with a world that telecommunications are making smaller and strongly interconnected, requires investors to be flexible, able to promptly perceive any new development and seize new opportunities.

The world is getting more and more interconnected; and interconnection means that everything comes to depend from everything else. This implies complexity, sudden changes, difficulty of forecasting, uncertainty. The increased flexibility, sensitivity to changes, quick adaptation needed to tackle this kind of problems are relatively easy to achieve in "light" activities, in which investments are limited and lead times are short. In the fields in which ENI operates, fields with huge investments and lead times of several years, things are more difficult.